

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: DESMOND T. CURRAN ET AL.

Serial No.:

Filed:

Group Art Unit:

Examiner:

For: MANNER OF ATTACHING COMPONENT ELEMENTS TO FILTRATION MATERIAL
SUCH AS MAY BE UTILIZED IN RESPIRATORY MASKS

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

The accompanying continuation application uses a Substitute Specification. The originally-filed specification in parent application Serial No. 09/420,671 (Attorney Docket No. 53924USA3A.002) did not include line numbers, paragraph numbers or boldface identifiers for the figures and features of the Drawing. The Substitute Specification contains paragraph numbers as required by 37 C.F.R. §1.125(c), boldface identifiers for the figures and features of the Drawing, and editorial corrections as shown on the enclosed "Marked Copy" of the Substitute Specification.

Please amend this continuation application as follows:

IN THE CLAIMS:

Please add the following new claims 44 – 72:

44. A filtration device comprising:
- a. a web of material comprising a layer of filtration material and having first and second major surfaces and an aperture, and
 - b. at least one component comprising a component base portion and an extension member that extends from the component base portion through the aperture, the extension member being deformed to have a surface in

sufficient contact with the web of material so as to make an effective seal between the component and the web of material.

45. The filtration device of claim 44, wherein a surface of the extension member contacts the second major surface.
46. The filtration device of claim 44, wherein the extension member has a tip with an end surface, and the end surface contacts the second major surface.
47. The filtration device of claim 44, wherein a portion of the extension member is deformed to extend radially outward from the aperture.
48. The filtration device of claim 44, wherein a portion of the extension member is deformed toward the base portion.
49. The filtration device of claim 48, wherein a portion of the extension member is deformed in a reverse bend toward the base portion.
50. The filtration device of claim 44, wherein the extension member has an outer wall with an outer diameter and the aperture in the web of material is sized smaller than the outer diameter.
51. The filtration device of claim 50, wherein a portion of the web of material adjacent the aperture is turned along the outer wall.
52. The filtration device of claim 44, wherein a portion of the web of material is sandwiched between two portions of the extension member.
53. The filtration device of claim 44, wherein a portion of the web of material is sandwiched between the extension member and the base portion.
54. The filtration device of claim 44, wherein a portion of the web of material is compressed between the extension member and the base portion.
55. The filtration device of claim 44, wherein a portion of the web of material is mechanically clamped between the extension member and the base portion.

56. The filtration device of claim 44, wherein there is a fluid tight connection between the component and the filtration material.
57. The filtration device of claim 44, wherein there is a gripping feature on the component extending into the thickness of the filtration material to prevent rotation of the component relative to the filtration material.
58. The filtration device of claim 44, further comprising an adhesive between the component and the filtration material to prevent rotation of the component relative to the filtration material.
59. The filtration device of claim 44, wherein the component comprises an exhalation valve.
60. A respiratory mask comprising:
- a. a web of material comprising a layer of filtration material and having first and second major surfaces and an aperture, and
 - b. an exhalation valve comprising a base portion and an extension member that extends from the base portion through the aperture, the extension member having a deformed portion that contacts a portion of the web of material surrounding the aperture.
61. The respiratory mask of claim 60, wherein the deformed portion is in sufficient contact with the web of material so as to make an effective seal between the component and the web of material.
62. The respiratory mask of claim 61, wherein there is an effective seal between the component and the filtration material.
63. The respiratory mask of claim 60, wherein the deformed portion contacts the second major surface.
64. The respiratory mask of claim 60, wherein the extension member is deformed to extend radially outward from the aperture.
65. The respiratory mask of claim 60, wherein the extension member has an outer wall with an outer diameter, the aperture in the web of material is sized smaller

than the outer diameter, and a portion of the filtration material adjacent the aperture is turned along a portion of the outer wall.

66. A method of attaching a component to a web of material comprising filtration material, the method comprising:
- providing a web of material comprising a layer of filtration material and having first and second major surfaces and an aperture;
 - providing a component comprising a base portion and a deformable extension member that extends from the base portion to a tip;
 - inserting the tip through the aperture; and
 - deforming the extension member so as to make an effective seal between the component and the web of material.
67. The method of claim 66, wherein the component is clamped in fluid-tight relationship to the filtration material.
68. The method of claim 66, wherein the extension member is deformed by contact with a forming punch and die, whereby a deformed portion of the extension member is bent relative to a non-deformed portion of the extension member.
69. The method of claim 66, wherein the extension member is deformed by cold forming.
70. The method of claim 66, wherein the extension member is deformed by thermal forming.
71. A method of making a respiratory mask, wherein a component is attached to a mask body, the method comprising:
- providing a mask body comprising a layer of filtration material and having an aperture therein;
 - providing a component comprising a base portion and a deformable extension member that extends from the base portion to a tip;
 - inserting the tip through the aperture; and
 - deforming the extension member so as to make an effective seal between the component and mask body.

72. The method of claim 71, wherein the component comprises an exhalation valve.

REMARKS

This Preliminary Amendment is accompanied by a Substitute Specification, Formal Drawing, and an Information Disclosure Statement.


New claims 44 – 72 have been added. Support for these claims can be found in the Substitute Specification at, e.g., paragraphs 9, 11 – 16, 47, 48, 49, 51, 54, 60, 61 – 63 and original claims 21 and 27. Claims 1 – 72 are pending in this application.

Favorable examination and allowance are respectfully requested.

Respectfully submitted,

DAVID R. CLEVELAND, P.A.
332 Minnesota St., Suite E-1324
St. Paul, MN 55101
(651) 251-2250 (phone)
(651) 251-2251 (facsimile)

Date May 31, 2001


David R. Cleveland
Reg. No. 29,524

All correspondence regarding this application should be directed to:

Karl G. Hanson, Esq.
Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Telephone: (651) 736-7776
Facsimile: (651) 736-3833
kg Hanson@mmm.com

Certificate of Express Mailing

Pursuant to 37 CFR 1.10 I certify that this application is being deposited on the date indicated below with the United States Postal Service "Express Mail Post Office to Addressee" service addressed to: Box Patent Application, Commissioner for Patents, Washington, D.C. 20231.

Express Mail Mailing Label No.

EK120526972US

Date of Deposit

5-31-01

Signature of Person Mailing Application



Printed Name of Person Mailing Application

Molly McClellan